

WHAT IS CLAIMED IS:

1. A process for depositing a silica coating upon a heated glass substrate comprising the steps of:

a) providing a heated glass substrate having a surface upon which the coating is to be deposited; and

b) directing a precursor mixture comprising a silane, ammonia, oxygen and an inert carrier gas toward and along the surface to be coated, and reacting the mixture at or near the surface to form a silica coating on the surface of the glass substrate.

2. The process for depositing a silica coating upon a glass substrate as claimed in claim 1, comprising providing a radical scavenger and adding the radical scavenger to the precursor mixture.

3. The process for depositing a silica coating upon a glass substrate as claimed in claim 1, wherein the silane is monosilane.

4. The process for depositing a silica coating as claimed in claim 2, wherein the radical scavenger gas in the precursor mixture is selected from the group consisting of ethylene and propylene.

5. The process for depositing a silica coating as claimed in claim 4, wherein the radical scavenger gas is ethylene.

6. The process for depositing a silica coating as claimed in claim 1, wherein the resultant coating on the glass substrate comprises less than about 1 atomic percent nitrogen.

7. The process for depositing a silica coating as claimed in claim 1, comprising providing an inert carrier gas and adding the inert carrier gas to the precursor mixture, prior to directing the precursor mixture toward and along the surface to be coated.

8. The process for depositing a silica coating as claimed in claim 7, wherein the inert carrier gas comprises at least one of nitrogen and helium.

9. The process for depositing a silica coating as claimed in claim 1, wherein the precursor mixture comprises about 0.1-about 3.0 percent silane, about 1.5 - about 9 percent oxygen, about 1.5 - about 9 percent ethylene and about 7.5 - about 60 percent ammonia, with the remainder comprising an inert carrier gas.

10. A coated glass article formed according to the process of claim 1.

11. The coated glass article according to claim 10, wherein the nitrogen concentration in the silica coating is less than about 1 atomic percent.

12. The coated glass article according to claim 10, wherein the refractive index of the coating is between about 1.45 and about 1.55.

13. The process for depositing a silica coating as claimed in claim 9, wherein the precursor mixture comprises about 1.5 percent silane, about 6 percent oxygen, about 4.5 percent ethylene and about 15 percent ammonia, with the remainder comprising an inert carrier gas.

14. The process for depositing a silica coating according to claim 1, wherein step b) comprises premixing the silane, ammonia, oxygen and the carrier gas to form the precursor mixture.

15. The process for depositing a silica coating according to claim 1, comprising cooling the coated glass substrate to ambient temperature.

16. A process for depositing a silica coating upon a heated glass substrate comprising the steps of:

a) providing a heated glass substrate having a surface upon which the coating is to be deposited; and

b) premixing monosilane, ammonia, oxygen and an inert carrier gas to form a precursor mixture, directing the precursor mixture toward and along the surface to be coated, and reacting the mixture at or near the surface to form a silica coating on the surface of the glass substrate.